



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/765,061

01/28/2004

Alwin Lee

4658-017

2327

22429 7590 09/25/2007
LOWE HAUPTMAN HAM & BERNER, LLP
1700 DIAGONAL ROAD
SUITE 300
ALEXANDRIA, VA 22314

EXAMINER

RILEY, MARCUS T

ART UNIT

PAPER NUMBER

2625

MAIL DATE

DELIVERY MODE

09/25/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/765,061

Applicant(s)

LEE ET AL.

Examiner

Marcus T. Riley

Art Unit

2625

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 7/23/07.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 July 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date attached.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. This office action is responsive to the applicant's remarks received on July 23, 2007. Claims 1-7 remain pending and newly added claims 8-11 are rejected.

Response to Arguments

2. Applicant's arguments with respect to amended claims 1-7 and newly added claims 8-11, filed on July 23, 2007 have been fully considered but they are not persuasive.

A: Applicant's Remarks

{“This response is a full and complete response to the non-final Office Action mailed April 23, 2007. In the present Office Action, the Examiner has noted that claims 1-7 are pending, that claims 4 and 7 stand rejected under 35 U.S.C. §112; and that claims 1-7 stand rejected under 35 U.S.C. §103.

By this response, reconsideration of the present application is respectfully requested. Claims 1-11 are now pending. Claims 1-7 are amended to correct minor and inadvertent typographical errors and to broaden the claims in various respects. Because the claims are not narrowed, there is no prosecution history estoppel. Likewise, no claims have been canceled and claims 8-11 have been added. Support for new claims 8-11 may be found throughout the specification and drawing figures.

Likewise, minor typographical errors in the specification and the abstract are corrected by the foregoing amendment. Again, the minor corrections do not alter claim scope and, therefore, do not result in prosecution history estoppel.

A replacement sheet for Figure 1 has also been submitted with this amendment. The application from which priority is taken does not state "prior art" on Figure 1. Figure 1, as filed, was incorrectly labeled as prior art. In addition, see, pages 4 and 5 of the specification. This has, therefore, been corrected and a new Figure 1 is submitted.

Please note we have made a change to the Brief Description of the Drawings by removing one or more erroneous descriptions of the drawings of the figures. "}

A: Examiner's Response

Applicant's arguments with respect to amended claims 1-7 and newly added claims 8-11, filed on July 23, 2007 have been fully considered but they are not persuasive. Claims 1-11 are now pending. Claims 1-7 were amended to correct minor and inadvertent typographical errors and to broaden the claims in various respects. However, after further examination, previous cited references Koga et al. (US 6,556,711 B2, hereinafter Koga '711), Kanemitsu et al. (US 4,996,603, hereinafter Kanemitsu '603) and Bearss et al. (US 5,987,221 hereinafter Bearss '221) disclose all the elements of each claim, see *Claim Rejections - 35 USC § 103* below. Thus, there is prosecution history estoppel.

B: Applicant's Remarks

{ "We begin with claim 1. The claim recites, for example, "combining said processed photo and processed character as a whole." This aspect of claim 1 is believed to not be shown or described in any of the applied patents, whether the patents are viewed individually or in combination. Specifically, the Examiner concedes at the bottom of page 3 and at the top of page 4 of the above referenced office action that this aspect is absent from Koga; however, the

Art Unit: 2625

Examiner relies on Kanemitsu to cure the deficiencies of Koga. Nonetheless, a review of Kanemitsu makes apparent that it does not show or describe at least this aspect of claim 1. Rather, Kanemitsu addresses a selection between fixed slice processing and halftone processing so that the selected output may be provided, rather than combining the outputs. See, for example, column 4, lines 20-39; and Figure 4. Specifically, Kanemitsu, at line 24 of column 4, while expressly referring to Figure 4, discusses "a selection circuit" for the purpose just described. Therefore, the Examiner's position regarding the subject matter disclosed by Kanemitsu is not believed to be correct.

As a result, claim 1 is believed to patentably distinguish from the applied patents for at least the reasons discussed above. The remaining claims, which depend from claim 1, likewise patentably distinguish from the applied patents. It is noted that the Examiner also applies Bearss to reject claims 4 and 7; however, Bearss also fails to cure the deficiency discussed above. Therefore, claims 4 and 7 patentably distinguish from the three applied patents, whether viewed individually or in combination. It is, therefore, respectfully requested that the rejection of claims 1-7 be withdrawn and these claims be permitted to proceed to issuance.

It is noted that claimed subject matter may be patentably distinguished from the applied documents for additional reasons. For example, Assignee specifically does not concede that the proposed combinations made by the Examiner are proper; however, the foregoing is believed to be sufficient to overcome the Examiner's rejections.}"

B: Examiner's Response

The aspect of claim 1 is believed to be shown or described in the applied patents, whether the patents are viewed individually or in combination. The Examiner does concede this aspect is absent from Koga '711 and the Examiner relies on Kanemitsu '603 to cure the deficiencies of Koga '711. A review of Kanemitsu '603 makes it apparent that it does show or describe at least this aspect of claim 1. Kanemitsu '603 does addresses a selection between fixed slice processing and halftone processing so that the selected output may be provided. Kanemitsu '603 also addresses a general image processing system where an original image of a document including characters, ruled lines and photos is scanned combined and processed as a whole so that the original image can be reproduced (*"Ref FIG. 1 is a schematic block diagram of a general image processing system. In FIG. 1, reference number 100 denotes an original image of a document to be scanned, 101 an image scanner, 102 a personal computer with a display (CRT), 103 a laser printer and 104 an image reproduced by the printer. The original image includes characters, ruled lines, and photos. They are scanned by the image scanner 101 and converted to a multi-level signal and then converted to a binary signal having values of "0" or "1". The binary signal is input into the personal computer 102 and printed by the laser printer 103 so that the original image can be reproduced."* column 3, lines 1-13). Thus, the Examiner's position regarding the subject matter disclosed by Kanemitsu is not believed to be correct.

As a result, claim 1 is not believed to patentably distinguish from the applied patents. The remaining claims, which depend from claim 1, are not patentably distinguish from the applied patents. It is noted that the Examiner also applies Bearss to reject claims 4 and 7; however, Bearss does not fail to cure the deficiency discussed above. Therefore, claims 4 and 7 are not

Art Unit: 2625

patentably distinguish from the three applied patents, whether viewed individually or in combination. Thus, claims 1-7 remains rejected.

Claim Objections

(The previous claim objections are withdrawn in light of the applicant's amendments.)

Claim Rejections - 35 USC § 112

(The previous claim rejections are withdrawn in light of the applicant's amendments.)

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 1-3, 5-6 and 8-11** are rejected under 35 U.S.C. 103(a) as being unpatentable over Koga '711 in combination with Kanemitsu '603.

Koga '711 discloses determining a background color from a master copy ("FIG. 7 is a diagram showing the detailed procedure of the background image segmentation step 22. A background color extraction step 211 analyzes the colors of the inputted intermediate image segment and judges whether the inputted intermediate image segment contains a color indicative of a background image segment." column 11, lines 50-55); and separating content of the master copy into photo and character with the background color as a criterion ("FIG. 17 is a block

Art Unit: 2625

diagram showing the construction of an image segmentation unit for discriminating between a character/line-drawing image segment and a pseudo-halftone image segment;" column 5, lines 14 -17).

Koga '711 does not expressly disclose processing a photo with halftone processing, processing a character with line art processing and combining the processed photo and processed character as a whole.

Kanemitsu '603 discloses processing a photo with halftone processing ("*When the circuit 3 detects a photo portion, the half-tone signal HTS is selected.*" column 4, lines 38-39); processing a character with line art processing ("*In the selection circuit 4, when the circuit 3 detects a character portion, the fixed slice signal FSS is selected.*" column 6, lines 36 and 37); and combining the processed photo and processed character as a whole ("*Ref FIG. 1 is a schematic block diagram of a general image processing system. In FIG. 1, reference number 100 denotes an original image of a document to be scanned, 101 an image scanner, 102 a personal computer with a display (CRT), 103 a laser printer and 104 an image reproduced by the printer. The original image includes characters, ruled lines, and photos. They are scanned by the image scanner 101 and converted to a multi-level signal and then converted to a binary signal having values of "0" or "1". The binary signal is input into the personal computer 102 and printed by the laser printer 103 so that the original image can be reproduced.*" column 3, lines 1-13).

Koga '711 and Kanemitsu '603 are combinable because they are from same field of endeavor of an image processing apparatus ("*Image Processing System*" Kanemitsu '603, see eg. Title).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the image processing apparatus as taught by Koga '711 by adding a method of processing a photo with halftone processing, processing a character with line art processing and combining the processed photo and processed character as a whole as taught by Kanemitsu '603.

The motivation for doing so would have been because this would provide an image processing apparatus and method in which excellent processing is applied to a color image in which image segments having different characteristics are mixed (*"An object of the present invention is to... provide an image processing apparatus and method in which excellent processing is applied to a color image in which image segments having different characteristics are mixed."* Koga '711 at column 3, lines 55-58).

Therefore, it would have been obvious to combine Koga '711 with Kanemitsu '603 to obtain the invention as specified in claim 1.

Regarding claim 2; Koga '711 discloses condensing master copy based on background color (*"Here the reduced image is obtained by reducing the size of the input image in the horizontal and vertical directions..."* column 33, lines 57-59); cutting transversely the condensed area (*"...an image reduced by 1/2 vertically and horizontally can be created."* column 34, lines 9-11); cutting vertically the transversely cut area for dividing the original area into several individual areas (*"The input image is divided into blocks 3101 of two pixels vertically and two pixels horizontally (for a total of four pixels) shown in FIG. 45, and one pixel in each block (say a pixel 3102 in the upper left-hand corner) is made one corresponding pixel 3103 of the reduced image, whereby an image reduced by 1/2 vertically and horizontally can be created."* column 34, lines 5-11); choosing a second background color from at least said individual area (*"...and*

Art Unit: 2625

second extraction means for extracting an image segment from the input color image using data of the image segment extracted by the first extraction means.” column 4, lines 22-25); marking at least individual area with photo as a photo area (“In the second embodiment, however, a binary image compressed by a compression method stored in the compressed-data header is registered as “image-segment shape”. ” column 22, lines 39-42); marking individual area with character as a character area (“...an image portion corresponding to the image-segment position of node to be processed is compressed by a coding method suited to a continuous color tone and the compressed data is registered as the “image-segment image data...” column 23, lines 32-36); utilizing second background color to condense individual areas and repeating the condensing step if the photo area and the character area of the individual area are not indentifiable (“It should be noted that quantization may be performed again when the color histogram is created. For example, in a case where an image of eight bits per R, G, B has been inputted, creating a color histogram while re-quantizing to four bits or seven bits results in a more complicated process. However, the memory size for storing the histogram can be reduced. An additional effect is that even if the color of the background image segment is uneven, a background image segment can be segmented in stable fashion.” column 12, lines 14-23).

Regarding claim 3; Koga ‘711 as modified does not expressly disclose where said halftone processing comprises a dithering process.

Kanemitsu ‘603 discloses the halftone processing comprises a dithering process (“...the multi-level signal of the photo portions of the original image is binary-coded by the half-tone

Art Unit: 2625

processing method based on dithering for binary coding the multi-level signal based on a predetermined dither pattern.” column 3, lines 19-23).

Koga ‘711 and Kanemitsu ‘603 are combinable because they are from same field of endeavor of an image processing apparatus (“*Image Processing System*” Kanemitsu ‘603, see eg. Title).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the image processing apparatus as taught by Koga ‘711 by making the halftone process comprise of a dithering process as taught by Kanemitsu ‘603.

The motivation for doing so would have been because this would provide an image processing apparatus and method in which excellent processing is applied to a color image in which image segments having different characteristics are mixed (“*An object of the present invention is to... provide an image processing apparatus and method in which excellent processing is applied to a color image in which image segments having different characteristics are mixed.*” Koga ‘711 at column 3, lines 55-58).

Therefore, it would have been obvious to combine Koga ‘711 with Kanemitsu ‘603 to obtain the invention as specified in claim 1.

Regarding claim 5;

a. Koga ‘711 discloses choosing a first background color from a master copy (“*FIG. 7 is a diagram showing the detailed procedure of the background image segmentation step 22. A background color extraction step 211 analyzes the colors of the inputted intermediate image segment and judges whether the inputted intermediate image segment contains a color indicative of a background image segment.* column 11, lines 50-55);

Art Unit: 2625

b. Koga '711 discloses separating the content of the master copy into images and text with the first background color as the criterion ("*FIG. 7 is a block diagram showing the construction of an image segmentation unit for discriminating between a character/line-drawing image segment and a pseudo-half-tone image segment;*" column 5, lines 14 -17);

c. Koga '711 discloses condensing the master copy based on the first background color ("*Here the reduced image is obtained by reducing the size of the input image in the horizontal and vertical directions...*" column 33, lines 57-59);

d. Koga '711 discloses cutting transversely the condensed master copy based on the first background color ("*...an image reduced by $\frac{1}{2}$ vertically and horizontally can be created.*" column 34, lines 9-11);

e. Koga '711 discloses cutting vertically the transversely cut master copy based on the first background color in order to create several individual areas ("*The input image is divided into blocks 3101 of two pixels vertically and two pixels horizontally (for a total of four pixels) shown in FIG. 45, and one pixel in each block (say a pixel 3102 in the upper left-hand corner) is made one corresponding pixel 3103 of the reduced image, whereby an image reduced by $\frac{1}{2}$ vertically and horizontally can be created.*" column 34, lines 5-11);

f. Koga '711 discloses choosing a second background color from the individual areas ("*...and second extraction means for extracting an image segment from the input color image using data of the image segment extracted by the first extraction means.*" column 4, lines 22-25);

g. Koga '711 discloses identifying images and text based on the second background color ("*...and second extraction means for extracting an image segment from the input color*

Art Unit: 2625

image using data of the image segment extracted by the first extraction means.” column 4, lines 22-25);

h. Koga ‘711 discloses marking the individual areas with images as an image area (*“In the second embodiment, however, a binary image compressed by a compression method stored in the compressed-data header is registered as “image-segment shape”...” column 22 lines 39-42);*

i. Koga ‘711 discloses marking the individual areas with text as a text area (*“...stores the created compression data in the compressed-data memory 1012. More specifically, an image portion corresponding to the image-segment position of node to be processed is compressed by a coding method suited to a continuous color tone and the compressed data is registered as the “image-segment image data...” column 23, lines 31-36);*

j. Koga ‘711 discloses if the individual areas cannot be identified, replacing the first background color with the second background color, condensing the unidentifiable individual areas based on the second background color, and then repeating d to j (*“Under the control of an image-segment discrimination control step 31, the foregoing steps are repeated until there are no longer any undiscriminated image segments. As a result, image-segment components of each image segment are discriminated” column 14, lines 56-60);*

Koga ‘711 does not expressly disclose processing images with halftone processing, processing text with line art processing and outputting the processed images and processed text as a whole.

k. Kanemitsu ‘603 discloses processing images with halftone processing (*“When the circuit 3 detects a photo portion, the half-tone signal HTS is selected.” column 4, lines 38-39);*

l. Kanemitsu '603 discloses processing text with line art processing (*"In the selection circuit 4, when the circuit 3 detects a character portion, the fixed slice signal FSS is selected."* column 6, lines 36 and 37);

m. Kanemitsu '603 discloses outputting the processed images and processed text as a whole (*"Ref FIG. 1 is a schematic block diagram of a general image processing system. In FIG. 1, reference number 100 denotes an original image of a document to be scanned, 101 an image scanner, 102 a personal computer with a display (CRT), 103 a laser printer and 104 an image reproduced by the printer. The original image includes characters, ruled lines, and photos. They are scanned by the image scanner 101 and converted to a multi-level signal and then converted to a binary signal having values of "0" or "1". The binary signal is input into the personal computer 102 and printed by the laser printer 103 so that the original image can be reproduced."* column 3, lines 1-13).

Koga '711 and Kanemitsu '603 are combinable because they are from same field of endeavor of an image processing apparatus (*"Image Processing System"* Kanemitsu '603, see eg. Title).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the image processing apparatus as taught by Koga '711 by processing images with halftone processing, processing text with line art processing and outputting the processed images and processed text as a whole as taught by Kanemitsu '603.

The motivation for doing so would have been because this would provide an image processing apparatus and method in which excellent processing is applied to a color image in which image segments having different characteristics are mixed (*"An object of the present*

Art Unit: 2625

invention is to... provide an image processing apparatus and method in which excellent processing is applied to a color image in which image segments having different characteristics are mixed." Koga '711 at column 3, lines 55-58).

Therefore, it would have been obvious to combine Koga '711 with Kanemitsu '603 to obtain the invention as specified in claim 5.

Regarding claim 6; Koga '711 as modified does not expressly disclose where said halftone processing comprises a dithering process.

Kanemitsu '603 discloses the halftone processing is a dithering process ("*...the multi-level signal of the photo portions of the original image is binary-coded by the half-tone processing method based on dithering for binary coding the multi-level signal based on a predetermined dither pattern.*" column 3, lines 19-23).

Koga '711 and Kanemitsu '603 are combinable because they are from same field of endeavor of an image processing apparatus ("*Image Processing System*" Kanemitsu '603, see eg. Title).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the image processing apparatus as taught by Koga '711 by making the halftone process comprise of a dithering process as taught by Kanemitsu '603.

The motivation for doing so would have been because this would provide an image processing apparatus and method in which excellent processing is applied to a color image in which image segments having different characteristics are mixed ("*An object of the present invention is to... provide an image processing apparatus and method in which excellent*

Art Unit: 2625

processing is applied to a color image in which image segments having different characteristics are mixed.” Koga ‘711 at column 3, lines 55-58).

Therefore, it would have been obvious to combine Koga ‘711 with Kanemitsu ‘603 to obtain the invention as specified in claim 5.

Regarding claim 8; Koga ‘711 discloses choosing a first background color from a master copy (*“FIG. 7 is a diagram showing the detailed procedure of the background image segmentation step 22. A background color extraction step 211 analyzes the colors of the inputted intermediate image segment and judges whether the inputted intermediate image segment contains a color indicative of a background image segment. column 11, lines 50-55); separating the content of the master copy into images and text with the first background color as the criterion (“ FIG. 7 is a block diagram showing the construction of an image segmentation unit for discriminating between a character/line-drawing image segment and a pseudo-half-tone image segment;” column5, lines 14 -17).*

Koga ‘711 does not expressly disclose processing images with halftone processing, processing text with line art processing and combining processed image and processed text.

Kanemitsu ‘603 discloses processing images with halftone processing (*“When the circuit 3 detects a photo portion, the half-tone signal HTS is selected.” column 4, lines 38-39); processing text with line art processing (“In the selection circuit 4, when the circuit 3 detects a character portion, the fixed slice signal FSS is selected.” column 6, lines 36-37); Kanemitsu ‘603 discloses combining processed image and processed text (“Ref FIG. 1 is a schematic block diagram of a general image processing system. In FIG. 1, reference number 100 denotes an*

Art Unit: 2625

original image of a document to be scanned, 101 an image scanner, 102 a personal computer with a display (CRT), 103 a laser printer and 104 an image reproduced by the printer. The original image includes characters, ruled lines, and photos. They are scanned by the image scanner 101 and converted to a multi-level signal and then converted to a binary signal having values of "0" or "1". The binary signal is input into the personal computer 102 and printed by the laser printer 103 so that the original image can be reproduced." column 3, lines 1-13).

Koga '711 and Kanemitsu '603 are combinable because they are from same field of endeavor of an image processing apparatus ("*Image Processing System*" Kanemitsu '603, see eg. Title).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the image processing apparatus as taught by Koga '711 by processing images with halftone processing, processing text with line art processing and combining processed image and processed text as taught by Kanemitsu '603.

The motivation for doing so would have been because this would provide an image processing apparatus and method in which excellent processing is applied to a color image in which image segments having different characteristics are mixed ("*An object of the present invention is to... provide an image processing apparatus and method in which excellent processing is applied to a color image in which image segments having different characteristics are mixed.*" Koga '711 at column 3, lines 55-58).

Therefore, it would have been obvious to combine Koga '711 with Kanemitsu '603 to obtain the invention as specified in claim 8.

Regarding claim 9; Koga '711 discloses condensing the master copy based on the background color (*"Here the reduced image is obtained by reducing the size of the input image in the horizontal and vertical directions..."* column 33, lines 57-59); cutting transversely the condensed area (*"...an image reduced by $\frac{1}{2}$ vertically and horizontally can be created."* column 34, lines 9-11); cutting vertically the transversely cut area for dividing the original area into several individual areas (*"The input image is divided into blocks 3101 of two pixels vertically and two pixels horizontally (for a total of four pixels) shown in FIG. 45, and one pixel in each block (say a pixel 3102 in the upper left-hand corner) is made one corresponding pixel 3103 of the reduced image, whereby an image reduced by $\frac{1}{2}$ vertically and horizontally can be created."* column 34, lines 5-11); choosing a second background color from at least one individual area (*"...and second extraction means for extracting an image segment from the input color image using data of the image segment extracted by the first extraction means."* column 4, lines 22-25); marking at least one individual area with photo as a photo area (*"In the second embodiment, however, a binary image compressed by a compression method stored in the compressed-data header is registered as "image-segment shape"..."* column 22 lines 39-42); marking the individual areas with character as a character area (*"...stores the created compression data in the compressed-data memory 1012. More specifically, an image portion corresponding to the image-segment position of node to be processed is compressed by a coding method suited to a continuous color tone and the compressed data is registered as the "image-segment image data..."* column 23, lines 31-36); utilizing second background color to condense individual area and repeating the condensing if the photo area and the character area of the individual area are not identifiable (*"It should be noted that quantization may be performed again when the color*

histogram is created. For example, in a case where an image of eight bits per R, G, B has been inputted, creating a color histogram while re-quantizing to four bits or seven bits results in a more complicated process. However, the memory size for storing the histogram can be reduced. An additional effect is that even if the color of the background image segment is uneven, a background image segment can be segmented in stable fashion." column 12, lines 14-23").

Regarding claim 10; Koga '711 discloses where the method is carried out in a scanner ("*...the color image input unit 1001 may be an input unit for reading in an image by a color image scanner...*" column 9, lines 18-20).

Regarding claim 11; Koga '711 discloses where the method is carried out in a fax ("*The image processing apparatus and method described below can be utilized in pixel-density conversion or zoomed output in a device, such as a color printer, which handles a color document image, in pixel-density conversion at the time of enlargement/reduction and output in a DTP system, and in pixel-density conversion and zoomed output in a color facsimile.*" column 8, lines 22-28).

5. **Claims 4 and 7** are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Koga '711 and Kanemitsu '603 as applied to claim 1 above, and further in view of Bearss '221.

The combination of Koga '711 and Kanemitsu '603 does not expressly disclose where the dithering process comprises a sampling mode dithering.

Bearss '221 discloses where the dithering process comprises a sampling mode dithering ("*As will be understood by those of ordinary skill in the art, the placement of orphan pixels in*

FIG. 2 is merely exemplary, and variations may also serve for a 3.times.3 sampling/detection window. Moreover, the orphan placement may also vary given a different size window, such as for a 5.times.5 area window, a 1.times.3 area window, or for a multiple sampling/detection window configuration." column 6, lines 42-47).

Koga '711 and Kanemitsu '603 are combinable with Bearss '221 because they are from the same field of endeavor of imaging systems (*"This invention relates in general to imaging systems..."* Bearss '221 at column 1, lines 7-9).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the imaging system as taught by the combination of Koga '711 and Kanemitsu '603 by adding dithering process comprising a sampling mode dithering as taught by Bearss '221.

The motivation for doing so would have been because it would improve the chances for discriminating between halftone image data and text/line art image data during rendering (*"...the placement of orphan pixels in dither matrix 40 at least enhances the probability of having and detecting orphan pixels in the resultant raster image array 50, thus improving the chances for discriminating between halftone image data and text/line art image data during rendering."* Bearss '221 at column 7, lines 6-11).

Therefore, it would have been obvious to combine Koga '711 and Kanemitsu '603 with Bearss '221 to obtain the invention as specified in claim 1.

Regarding claim 7; Bearss '221 discloses where the dithering process comprises a sampling mode dithering (*"As will be understood by those of ordinary skill in the art, the placement of orphan pixels in FIG. 2 is merely exemplary, and variations may also serve for a*

Art Unit: 2625

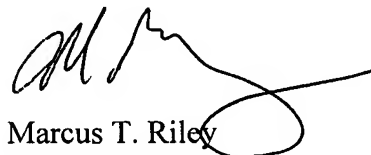
3.times.3 sampling/detection window. Moreover, the orphan placement may also vary given a different size window, such as for a 5.times.5 area window, a 1.times.3 area window, or for a multiple sampling/detection window configuration." column 6, lines 42-47).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marcus T. Riley whose telephone number is 571-270-1581. The examiner can normally be reached on Monday - Friday, 7:30-5:00, est.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Twyler Lamb can be reached on 571-272-7406. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Marcus T. Riley
Assistant Examiner
Art Unit 2625



TWYLER LAMB
SUPERVISORY PATENT EXAMINER